I CLAIM:

1. A Nuclear Myosin I β protein comprising a 16 amino acid N-terminal extension added to a cytoplasmic Myosin I β protein amino acid sequence.

2. The Nuclear Myosin I β protein of claim 1 wherein the amino acid sequence comprises:

mryrasalgs dgvrvtmesa ltardrvgvq dfvllenfts
eaafienlrr rfrenliyty igpvlvsvnp yrdlqiysrq
hmeryrgvsf yevpphlfav adtvyralrt errdqavmis
gesgagktea tkrllqfyae tcpapergga vrdrllqsnp
vleafgnakt lrndnssrfg kymdvqfdfk gapvgghils
ylleksrvvh qnhgernfhv fyqlleggee etlrrlgler
npqsylylvk gqcakvssin dksdwkvmrk alsvidfted
evedllsiva svlhlgnihf aadedsnaqv ttenqlkylt
rllgvegttl realthrkii akgeellspl nleqaayard
alakavysrt ftwlvrkinr slaskdaesp swrsttvlgl
ldiygfevfq hnsfeqfcin ycneklqqlf ieltlkseqe
eyeaegiawe pvqyfnnkii cdlveekfkg iisildeecl
rpgeatdltf lekledtvkp hphflthkla dqktrksldr
gefrllhyag evtysvtgfl dknndllfrn lketmcssmn
pimaqcfdks elsdkkrpet vatqfkmsll qlveilrske
payircikpn dakqpgrfde vlirhqvkyl glmenlrvrr
agfayrrkye aflqrykslc petwpmvagr pqdgvavlvr
hlgykpeeyk mgrtkifirf pktlfateds levrrqslat
kiqaawrgfh wrqkflrvkr saiciqswwr gtlgrrkaak
rkwaaqtirr lirgfilrhs prcpenaffl dhvrasflln
lrrqlprnvl dtswptpppa lreasellre lcmknmvwky
crsispewkq qlqqkavase ifkgkkdnyp qsvprlfist
rlgteeispr vlqslgsepi qyavpvvkyd rkgykprprq
llltpsavvi vedakvkqri dyanltgisv sslsdslfvl
hvqrednkqk gdvvlqsdhv ietltktals adrvnninin
qgsitfaggp grdgiidfts gsellitkak nghlavvapr
lnsr.

Sub A2

3. An oligonucleotide sequence encoding the Nuclear Myosin I β of claim 1.

4. A cDNA molecule with the following nucleotide sequence:

1 ggagcggggc gccgggtccg gcaggatgcg ctaccgggca tcggccctgg gcagtgacgg
61 ggttcgagtg accatggaga gcgccttgac tgcccgagac cgggtagggg tgcaggactt
121 tgtcctgctg gagaatttca ccagtgaggc tgccttcatt gagaacctcc ggcggcggtt
181 ccgggagaac ctcatttata cctacatcgg tcctgtccta gtctctgtca atccctaccg
241 agacctacag atctacagcc ggcagcatat ggaacgctac cgtggtgtca gtttctatga
301 agtaccacct catttgtttg cagtggctga cactgtatac cgggcacttc gtactgagcg
361 tcgggaccag gcagtgatga tttctggaga gagtggggca ggcaagacag aggccaccaa
421 gagactgctc cagttctatg cagagacctg cccagcccct gaacggggtg gcgcagtgcg
481 agaccgcctg ttgcagagca accccgtgtt agaggccttt gggaatgcca agactctccg
541 caacgataac tccagccggt ttggaaagta catggatgtg cagtttgact tcaagggtgc
601 ccccgtggga ggccacattc tcagttacct cctggaaaag tcccgggtgg tgcaccaaaa
661 tcacggagag cggaacttcc acgtctttta ccagctactg gaggggggcg aggaggagac
721 tctccgtcgg ctgggcttgg aacggaaccc ccagagctac ttgtacctgg tgaagggcca
781 gtgtgccaag gtctcctcca tcaacgacaa gagtgactgg aaggttatga ggaaggcgct
841 gtccgtcatt gacttcactg aggatgaagt ggaggacttg ctcagcatcg

tggccagcgt

901 cctacatctg ggcaacatcc actttgctgc tgacgaggac agcaatgccc aggttactac

961 tgagaaccag ctcaaatatc tgaccaggct ccttggtgtg gaaggtacaa cacttaggga

1021 agccctgacc cacaggaaga tcatcgccaa gggggaagag ctcctgagcc cactgaacct

1081 tgaacaggcg gcatatgcaa gggatgcgct tgccaaggct gtgtacagcc ggacattcac

1141 ctggctggtc agaaagatca ataggtcact ggcctctaag gacgctgaga gccccagctg

1201 gcgaagcacc acggttcttg ggctcctgga catttacggc tttgaagtgt ttcagcataa

1261 cagcttcgag cagttctgca tcaactactg caatgagaag ctgcagcagc tcttcatcga

1321 gctgactctc aagtcggagc aggaggaata cgaggctgag ggcatcgcgt gggaacctgt

1381 ccagtacttc aacaacaaga tcatctgtga cctggtagag gagaagttca agggcatcat

1441 ctccatcttg gatgaagagt gcctgcgtcc tggggaggcc acggacctga cctttctgga

1501 gaagttggag gacactgtca agccccaccc tcacttcctg acgcacaagc tcgctgacca

1561 gaagaccagg aaatccctag accgaggggga gttccgcctt ctgcattatg ctggagaggt

1621 gacctacagt gtgactgggt ttctggataa aaacaatgac ctcctcttcc ggaacctgaa

1681 ggagaccatg tgcagctcaa tgaacccccat catggcccag tgctttgaca agagtgagct

1741 cagtgacaag aagcggccag gacggtggc cacccagttc aagatgagcc tcctgcagct

1801 cgtggagatc ctgaggtcta aggagcctgc ctatatccgg tgcatcaagc

caaacgacgc
1861 caagcagccg ggtcgctttg atgaggtgct catccgacat caggtgaagt
acctgggact
1921 gatggagaat ctgcgcgtgc gcagagctgg ctttgcctat cgtcgcaaat
atgaggcttt
1981 cctgcagagg tacaagtcac tgtgcccaga gacatggccc atgtgggcag
gacggcccca
2041 ggatggtgtg gccgtgttgg tcagacacct cggctacaag ccagaagagt
acaaaatggg
2101 caggactaag atcttcatcc gattccccaa gaccttattt gccacagagg
actccctgga
2161 agtccggcgg cagagtctag ccaccaagat ccaggcggcc tggaggggct
ttcattggcg
2221 acagaaattt ctccgggtga agcgatcagc catctgtatc cagtcatggt
ggcgtggcac
2281 actgggccgg aggaaggcag ccaagaggaa gtgggcagcc cagaccatcc
gtcgactcat
2341 ccgtggcttc attttgcgcc attcaccccg gtgccctgag aatgccttct
tcttggacca
2401 cgtgcgcgcc tcatttttgc ttaacctgag gcggcaactg ccccggaatg
ttctggacac
2461 ctcctggccc acacccccac ctgccctgag agaggcctca gaactgctac
gggaactgtg
2521 catgaagaac atggtgtgga agtactgccg gagcatcagc cctgagtgga
agcagcagct
2581 gcagcaaaag gcggtggcta gtgaaatttt caagggcaag aaggacaact
acccccagag
2641 tgtccccaga ctcttcatta gcacacggct tggcacagag gagatcagcc
ccagagtgct
2701 tcaatccttg ggctctgaac ccatccagta tgccgtgccc gtggtaaaat
acgaccgtaa
2761 gggttacaag cctcgccccc ggcagctgct gctcacgccc agtgctgtgg

tcattgtgga
2821 ggatgctaaa gtcaagcaga gaattgatta tgccaaccta accggaatct
ctgtcagtag
2881 cctgagtgat agcctatttg tgcttcacgt gcagcgtgaa gacaacaagc
agaagggaga
2941 tgtggtgctg cagagtgatc atgtgatcga gacactaacc aagacggccc
tcagtgctga
3001 ccgcgtgaac aatatcaaca tcaaccaggg cagcataacg tttgcagggg
gtccaggcag
3061 ggacggcatc attgacttca catcgggctc agagcttctc atcaccaagg
ctaagaatgg
3121 ccacctggct gtggtggccc cacggctgaa ttctcggtga tgaaggctgc
ggtggaccgc
3181 tcctgactcc tgatgcttcc cttagtcccc tcctcccctc cgacttacca
aaaactcaag
3241 cttccaaaca gggatccatg gacaccctca aaacccacgc tgcaaactcc
tgccttctgc
3301 tcgccccctc ttgaggtgat caggagccag ggagctaccc catgagtggg
ccaggccggg
3361 ccacaccaat agaaaagcag aggcctgagc aggccaggcc agccctctgc
tgatgccaaa
3421 tatctaagac aagggaattt taactgaggt tttctctgag atttttgat
gctttatagg
3481 aaactatttt tttaagaaag ccattttcct accctaaaca cactggatgt
gtttttccct
3541 gcctcgaaca gggcaaggaa tgtaactgaa agactgactg ggctgggctg
gaaggtcctc
3601 ttcttggcca acccttcctt attcccttgt ctgcctgtcc atccacctgc
acctttag
3661 cca.

5. A peptide comprising an amino acid sequence MRYRASALGSDGVRVT.

Sub A2

6. A cDNA molecule encoding the peptide of claim 4.

7. The peptide of claim 5 comprising an epitope with the amino acid sequence FLAG.

8. An antibody directed to the Nuclear Myosin I β protein of claim 2.

9. An antibody directed to the peptide of claim 4.

10. The antibody of claim 7, wherein the antibody is a monoclonal antibody.

11. An antibody directed to the peptide of claim 7.

12. A functional complex formed between one RNA polymerase II.

13. A method for inhibiting cell proliferation, said method comprising:

(a) obtaining at least one antibody to the peptide of claim 5; and

(b) administering the antibody to an organism so that the antibody contacts cells.

14. The method of claim 13 wherein the antibody is a monoclonal antibody.

15. The method of claim 13 wherein the antibody is a synthetic compound.

16. A method for inhibiting cell proliferation, said method comprising

a) obtaining an antisense oligonucleotide to the cDNA of claim 3;

(b) contacting the cDNA with the antisense oligonucleotide to prevent expression of the cDNA and reduce cell proliferation.

17. A method for screening a candidate agent that inhibits transcription, said screening method comprising the antibodies in claim 9.

(a) providing proliferating cells;

(b) contacting the cells with the candidate agent;

(c) determining whether nuclear myosin I β (MNI β) is translocated to the nucleus of the cells; and

(d) inferring that the candidate agent is an inhibitor of cell proliferation if NMI β is not detected in the cells nucleus.